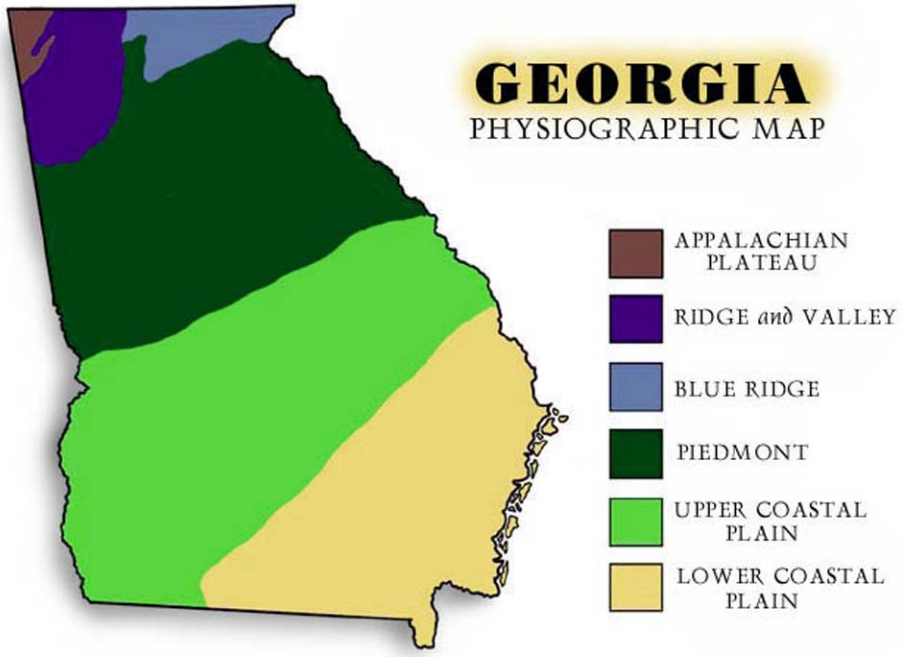
Appendix A: Georgia

Introduction and Overview

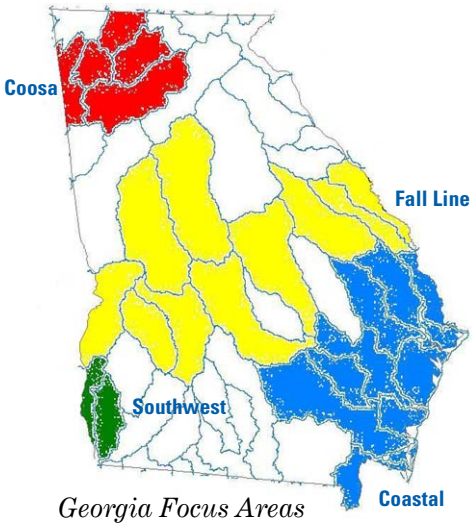
Georgia has an area of 59,441 square miles, which ranks it 24th in size among the 50 U.S. states. The Georgia landscape runs from the mountains in the north and northeast to the Coastal Plain in the southeast. Georgia experiences a humid and subtropical climate with fairly mild winters and hot moist summers. The annual precipitation varies from 40 inches in central Georgia to more than 74 inches in northeast Georgia.

Georgia is divided into five physiographic provinces: the Cumberland Plateau (also known as the Appalachian Plateau), the Ridge and Valley, the Blue Ridge, the Piedmont, and the Coastal Plain (upper and lower). The vegetation varies within and among these provinces depending upon soil type, elevation, moisture, and disturbance regimes. In addition to these provinces there are distinct differences in areas such as the Fall Line and coast.

Georgia's location within the temperate zone is associated with moderate to high levels of biodiversity. Georgia ranks second among all states in amphibian diversity, third in freshwater fish diversity, seventh in plant diversity, seventh in reptile diversity, fifteenth in bird diversity, and seventeenth in mammal diversity. Based on a recent nationwide assessment of 21,395 species, Georgia ranks sixth in the nation in overall biological diversity based on numbers of vascular plants, vertebrate animals, and the better known invertebrate groups. Georgia also ranks twelfth in the nation in terms of endemic species, eighth in percentage of species considered globally imperiled (12.9 percent), and fifth in terms of number of known or suspected extinctions (Stein et al. 2000).



Habitat loss is the greatest threat facing wildlife habitat in Georgia today. Georgia's population has grown to 8 million people in 2000, up 26 percent from a decade ago. As a result, thousands of acres of wildlife habitat are lost each year to accommodate the expanding human population. Georgia has 63 species of federally listed endangered and threatened species and many more state listed and rare species. More than 90 percent of the land in Georgia is privately owned, therefore the future health of the land, water, and wildlife depends upon private landowners.



Georgia Focus Areas

Geographic Focus Areas and Priority Habitats

Four geographic focus areas were identified in Georgia to concentrate Partners Program assistance opportunities. These areas were identified based on the conservation need of the federal trust resources, and species of concern according to the Georgia Department of Natural Resources (GADNR) Comprehensive Wildlife Conservation Strategy (GADNR 2005). These focus areas were also chosen because of the potential and success of ongoing efforts in these areas to carry out habitat improvement activities on private lands. These four focus areas are the Coosa, Coastal, Southwest, and Fall Line.

Coosa Focus Area

The Coosa focus area includes the upper Coosa River, Etowah River, Coosawattee River, Oostanaula River, and the Conasauga River. The Upper Coosa River Basin occupies three different physiographic provinces including

- Blue Ridge, the core of the ancient Southern Appalachians;
- Ridge and Valley, the largest province with primarily limestone geology; and,
- Piedmont, gently rolling hills south and east of the Blue Ridge.

Coosa Focus Area

The Coosa River system begins as tiny springs in the Cohutta Mountains of Northwest Georgia (headwaters of the Oostanaula River) and in the Blue Ridge Mountains of North Central Georgia (headwaters of the Coosawattee and Etowah rivers).

Draining more than 5,000 square miles of land, the Upper Coosa River Basin ranges from Southeastern Tennessee and North Central Georgia to Weiss Dam in Northeast Alabama, and holds an incredible array of aquatic species. No other river basin in North America has a higher percentage of endemic species than the Upper Coosa River Basin. Thirty (30) different species of fishes, mussels, snails and crayfishes are endemic to the Coosa.

The Upper Coosa River is the historic home to 100 different fish species, 43 mussel species, 32 species of snails, and 18 species of crayfish. Six fish species are listed as federally endangered or threatened, and seven mussels and snails are listed as federally threatened or endangered.

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Planting trees within the Coosa River riparian zone

Priority Habitat
Riparian, Stream channel

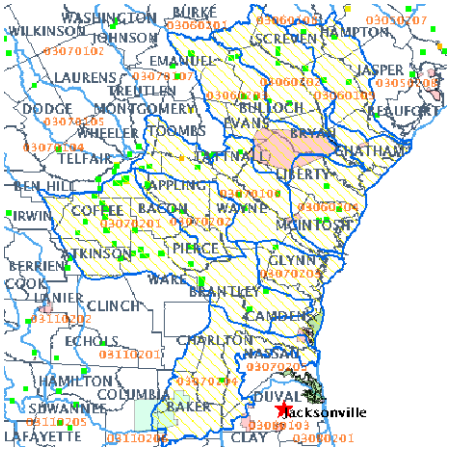
Five-Year Target (FY 2007-2011)
2.5 miles riparian, 1 mile instream

*Focus Species**
Amber darter (E); Etowah darter (E); Conasauga logperch (E); blue shiner (T); upland combshell (E); southern acornshell (E); Coosa moccasinshell (E); Finelined pocketbook (T); Alabama moccasinshell (E); Southern pigtoe (E)

Threats
Loss of habitat and water quality degradation from a variety of human activities (e.g. residential and commercial development, road construction, lack of implementation of best management practices on agricultural and forestry lands.)

Action Strategies
Work with partners to leverage technical and financial assistance to:

- delivery habitat improvement projects. Partners funds will target riparian and floodplain buffer restoration, livestock and vehicular exclusion from streams, re-establishing stream channel stability using natural channel design methods and bioengineering practices, re-establishing instream habitat connectivity through the removal of barriers to aquatic species passage, and the control of invasive exotic plants.
- inventory and assess river and streams to identify and prioritize conservation needs and projects;
- protect high quality habitat, restore habitat connectivity within the stream corridor, improve water quality, restore stream channel equilibrium, and restore and enhance aquatic habitat for priority species;
- monitor the results of conservation activities.



Coastal Focus Area

Coastal Focus Area

The Coastal focus area includes almost a third of the salt marshes along the eastern coastline of the United States, and thousands of acres of freshwater wetlands. Natural communities associated with this focus area include oxbow lakes, sandbars, evergreen hammocks, sand ridge scrub forests, hardwood levee forests, cypress-gum swamps, pine flatwoods, limestone shoals, coastal marshes, and open-water estuaries. The landscape of this area is a low, flat region of well-drained soils with some areas of gently rolling hills and poorly drained flatwoods. Ecoregional subdivisions of the Coastal Focus Area include the Okefenoke Plains, Sea Island Flatwoods, Okefenoke Swamp, Bacon Terraces, Floodplains and Low Terraces, and Sea-Islands and Coastal Marsh.

Much of the coastal area is currently experiencing rapid urbanization and development, or it has been converted to intensively managed loblolly or slash pine. This area once was covered by a variety of forest communities that included longleaf pine, slash pine, pond pine, beech-magnolia, and mixed upland hardwoods; but land cover in the region is now predominantly slash and lobolly pine plantations with cypress-gum, bay swamp, and bottomland hardwoods in low lying areas.

Priority Habitat
Riparian; Stream Channel

Five-Year Target (FY 2007-2011)
2.5 miles

*Focus Species**
Shortnose sturgeon (E); Altamaha spiny mussel (C); Altamaha arc mussel (SOC); swallow-tailed kite (SOC)

Threats
Residential and commercial development, loss of habitat, lack of implementation of best management practices on agricultural and forestry lands, construction of impoundsments on tributaries

Action Strategies
Work with partners and landowners to improve water quality in coastal rivers and streams. Identify degraded sites, and contact and encourage landowners to participate in the Partners Program or other conservation programs. Fund projects to fence livestock out of streams, provide alternative watering sources, install heavy use area protection in streams, revegetate riparian areas as needed, control invasive exotic species.

Priority Habitat
Upland: Longleaf Pine

Five-Year Target (FY 2007-2011)
750 acres

*Focus Species**
Eastern indigo snake (T); gopher tortoise (SOC); red-cockaded woodpecker (E); Bachman's sparrow (SOC); Radford's dicerandra (SOC); hairy rattleweed (E)

Threats
Conversion to slash and loblolly pine plantations, lack of prescribe fire, residential and commercial development

Action Strategies
Work with other partners and landowners to provide technical and financial assistance to improve existing degraded longleaf pine stands and restore longleaf pine habitat to appropriate sites where it has been removed. Some practices are midstory control, prescribe burning, establish and maintain firebreaks, competition control, plant longleaf pine seedlings, plant ground cover, and control invasive species.

Priority Habitat
Wetland

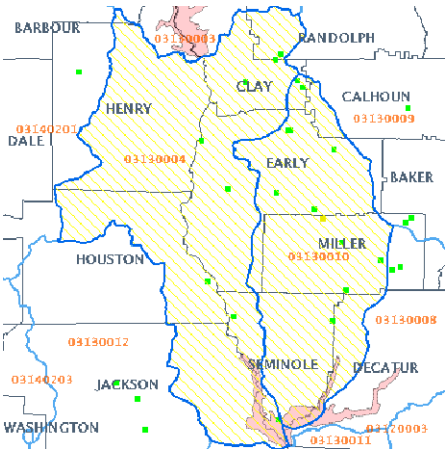
Five-Year Target (FY 2007-2011)
100 acres

*Focus Species**
Wood stork (E); flatwoods salamander (T); striped newt (SOC); eastern indigo snake (T)

Threats
Residential and commercial development, draining of wetlands, conversion to slash pine plantations

Action Strategies
Work with other partners and landowners to identify degraded sites; contact and encourage landowners to participate in the Partners Program or other conservation programs.

Fund projects to replant bottomland hardwood areas, plug ditches to restore hydrology, control invasive exotic plants such as privet, Chinese tallow, water hyacinth, and hydrilla.



Southwest Focus Area

Southwest Focus Area

This focus area is made up of Spring Creek and Sawhatchee Creek in southwest Georgia. Sawhatchee Creek is the last known tributary of the Chattahoochee River to still harbor three federally endangered mussel species. Sawhatchee Creek has also been proposed as Critical Habitat for these species and is listed by the Georgia Department of Natural Resources Stream Team as one of their "reference sites" due to its high fish species diversity. Several of these fish species are suspected to be hosts for listed and other native mussels known to occur in Sawhatchee Creek.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Eroded streambank on Spring Creek

The Spring Creek watershed drains 530,000 acres of land in southwest Georgia. The headwaters of Spring Creek originate from natural springs in Clay, Calhoun, and Early Counties. Spring Creek then continues its journey through Miller, Decatur, and Seminole Counties where it empties into Lake Seminole. The watershed is part of the larger Flint River System and sits on top of the Floridan/ Jacksonian Aquifer and the Claiborne Aquifer.

Priority Habitat
Riparian, Stream Channel

Five-Year Target (FY 2007-2011)
1.5 miles riparian, 0.5 miles stream channel.

*Focus Species**
Shiny-rayed pocketbook (E); oval pigtoe (E); and the Gulf moccasinshell (E)

Threats
Loss of habitat and water quality degradation (e.g. residential and commercial development, road construction, lack of implementation of best management practices on agricultural and forestry lands)

Action Strategies
Work with partners to leverage technical and financial assistance to:

- deliver habitat improvement projects. Partners funds will target riparian and floodplain buffer restoration, livestock and vehicular exclusion from streams, re-

establishing stream channel stability using natural channel design methods and bioengineering practices, re-establishing instream habitat connectivity through the removal of barriers to aquatic species passage, and the control of invasive exotic plants.

- inventory and assess river and streams to identify and prioritize conservation needs and projects;
- protect high quality habitat, restore habitat connectivity within the stream corridor, improve water quality, restore stream channel equilibrium, and restore and enhance aquatic habitat for priority species;
- monitor the results of conservation activities.

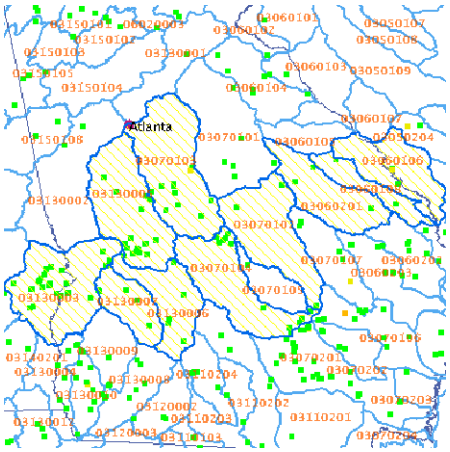
Priority Habitat
Upland: Longleaf Pine

Five-Year Target (FY 2007-2011)
250 acres

*Focus Species**
Gopher tortoise (SOC); flatwoods salamander (T); striped newt (SOC); red-cockaded woodpecker (E); Bachman's sparrow (SOC)

Threats
Conversion to slash and loblolly pine plantations, lack of prescribe fire, residential and commercial development

Action Strategies
Work with other partners and landowners to provide technical and financial assistance to improve existing degraded longleaf pine stands and restore longleaf pine habitat to appropriate sites where it has been removed. Some practices are midstory control, prescribe burning, establish and maintain firebreaks, competition control, plant longleaf seedlings, plant ground cover, and control invasive exotic plant species.



Fall Line Focus Area

Fall Line Focus Area

The Fall Line focus area is located in the northern edge of the Southeastern Plains ecoregion and is a distinctive zone of transition between the topographically varied Piedmont and the relatively flat Coastal Plain (GA DNR 2005). It is the landward boundary of encroachment by the ocean during the Cretaceous period when sea level was much higher than it is today.

The Fall Line gets its name from the many waterfalls and rapids that occur along it, created by rivers running from the Piedmont with its relatively hard, erosion-resistant metamorphic rocks into the Coastal Plain with its relatively soft and erodable sedimentary rocks. Rivers above the Fall Line typically have narrow or non-existent floodplains, while rivers below the Fall Line are characterized by wide floodplains, adjacent marshes and meandering streambeds.

The Fall Line contains an area known as the Sand Hills, which form a narrow, rolling to hilly, highly dissected coastal plain belt stretching across the state from Augusta to Columbus. The region is composed primarily of Cretaceous and some Eocene-age marine sands and clays deposited over the crystalline and metamorphic rocks of the Piedmont. On the drier sites, turkey oak and longleaf pine are dominant, while shortleaf-loblolly pine forests and other oak-pine forests are common throughout the region.

Some of the more important river systems in this focus area are: Middle Chattahoochee, Upper and Middle Flint, Upper and Lower Ocmulgee, Lower Oconee, Upper Ogeechee, and Middle Savannah.

Priority Habitat
Riparian; Stream Channel

Five-Year Target (FY 2007-2011)
2.5 miles

*Focus Species**
Robust redhorse (SOC); goldstripe darter (SOC); Gulf moccasinshell (E); shinyrayed pocketbook mussel (E)

Threats
Residential and commercial development, loss of habitat, lack of implementation of best management practices on agricultural and forestry lands, invasive species

Action Strategies
Work with other partners and landowners to identify degraded sites; contact and encourage landowners to participate in the Partners Program or other conservation programs.

Fund projects to fence livestock out of streams, provide alternative watering sources, install heavy use area protection in streams, revegetate riparian areas as needed, control invasive exotic species.

Priority Habitat
Upland: Longleaf Pine

Five-Year Target (FY 2007-2011)
750 acres

*Focus Species**
Gopher tortoise (SOC); red-cockaded woodpecker (E); Bachman's sparrow (SOC); striped newt (SOC); gopher frog (SOC)

Threats
Conversion to slash and loblolly pine plantations, lack of prescribe fire, residential and commercial development

Action Strategies
Partner with other agencies and landowners to provide technical and financial assistance to improve existing degraded longleaf pine stands and restore longleaf pine

habitat to appropriate sites where it has been removed. Some practices are midstory control, prescribe burning, establish and maintain firebreaks, competition control, plant longleaf seedlings, plant ground cover, and control invasive species.

*E=federally listed endangered species; T=federally listed threatened species; C=federal candidate species; SOC=species of concern

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Stakeholders Involved

The following is a list of stakeholders involved in the Partners Program in Georgia. These stakeholders are involved in program activities in varying degrees, and all support the Program. The Service has worked with each of the stakeholders included below.

- Private landowners (over 100)
- Georgia Forestry Commission
- Georgia Soil and Water Conservation Commission
- Georgia Department of Natural Resources
- Georgia Association of Conservation Districts
- Numerous local Conservation Districts
- Natural Resources Conservation Service
- The Nature Conservancy
- The Longleaf Alliance
- The Conasauga River Alliance
- Etowah River Alliance
- Limestone Valley RC&D
- Seven Rivers RC&D
- Golden Triangle RC&D
- Pine Country RC&D
- Upper Suwannee River Watershed Initiative
- Spring Creek Watershed Partnership
- Upper Chattahoochee River Keeper
- University of Georgia
- Auburn University
- Farm Services Agency
- Glynn County Board of Commissioners
- City of Jesup
- City of Lakeland
- City of Douglas
- Southeastern Natural Sciences Academy
- U.S. Forest Service
- City of Chickamauga
- Wayne County School Board
- Walker County Board of Education
- Appling County Middle School
- Tattnall County High School
- Gordon Central High School
- Georgia Conservancy
- Sandy Creek Nature Center
- Elachee Nature Science Center
- Emanuel County School Board
- Douglas County
- City of Alpharetta
- Floyd College
- Dade County
- Oconee County
- Ware County
- Morgan County
- Brantley County
- Bacon County
- Darton College
- Joseph W. Jones Ecological Research Center
- National Fish and Wildlife Foundation
- South Georgia Youth Park
- Georgia Wildlife Federation
- Cherokee Tribe of Georgia

References

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Wharton, C. W. 1978. The natural environments of Georgia. Georgia Department of Natural Resources, Georgia Geologic Survey Bulletin 114. Atlanta.